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SOLUTION GUIDE

Data Observability and Catalog for Agentic AI

Context meets confidence: Unifying a data catalog with observability is a value multiplier.

Data leaders have spent years investing in two critical capabilities: data catalogs to help users find and understand data, and data observability to ensure data is reliable in production. Yet many organizations still struggle with the same outcome, which is that data teams don't trust their datasets and lose time chasing issues after decisions have already been made.

The root problem isn't that catalogs or observability tools don't work. It's that they're often deployed as separate systems with separate workflows, and therefore not working together.

For example, a data catalog can tell you what a dataset is, who owns it, and how it's used, but it may not reflect the current health of that data. Meanwhile, observability can detect anomalies, pipeline failures, or schema changes, but usually lacks the business context that tells you which data issues matter most and who is impacted.

When these critical capabilities are disconnected, data users end up toggling between tools to answer basic questions like:

- What does this KPI mean?
- Is this data asset fresh?
- Can I use this data product right now?

These questions slow down analytics, decision-making, and AI initiatives. Actian's approach is to merge data catalog and observability solutions into a single, connected, trusted data intelligence experience.

This allows users to discover data with context and validate it with reliability metrics without breaking workflow momentum.

Why Catalog and Observability Integration Matters Now

A data catalog and an observability solution serve different purposes. A catalog focuses on metadata management, discovery, and governance, while observability monitors the operational health and performance of data pipelines in real time.

Connecting these capabilities enables you to:

- **Go from static metadata to living context.** Catalog entries become more valuable when they're supported by data quality, incident status, and validation results.
- **Go from "what broke?" to "what's impacted?"** Observability becomes more actionable when it's linked to data ownership, lineage, definitions, and usage.
- **Go from reactive firefighting to proactive trust.** Teams stop discovering problems downstream and start preventing them earlier, before reports, dashboards, or AI systems act on bad inputs.

The Actian Approach: Catalog Intelligence with Observability Trust

Actian brings together the Actian Data Intelligence Platform that offers catalog-driven context with Actian Data Observability for proactive data quality. Teams and systems can move quickly from finding data to trusting data to acting on it with confidence. Catalog and observability integration lets you:

Put catalog context where users actually work

The fastest way to increase adoption of a data catalog is to allow teams to use the tools they're already familiar with. Requiring data teams to leave behind their favorite tools and learn new ones is a barrier to usage.

With familliar tools and a catalog that delivers context, business users understand reports faster, trust what they're seeing, and rely less on analysts and data stewards for basic clarification. This supports true self-service analytics at enterprise scale.

Make observability proactive to mitigate issues

Many observability approaches detect issues after bad data has already moved downstream. Actian offers data observability agents that take a different approach by validating data as it's ingested, preventing poor quality data from being leveraged for apps, use cases like AI, and decision-making.

These agents don't just alert you to a quality issue. They recommend validation rules, explain likely root causes, and orchestrate resolution steps to help close the loop from detection to action.

7 Data Observability Agents

Actian's multi-agent architecture includes specialized roles for these agents:

1. Validation
2. Incident Diagnosis
3. Lineage
4. Data Insight
5. Orchestration
6. Routing
7. Help

These agents support the full lifecycle of a data issue, from detection to resolution.

Extend observability across the lakehouse ecosystem

Merging a catalog and observability ensures quality data across modern lakehouse architectures. These include:

- **Microsoft Fabric/OneLake.** In-place monitoring profiles and validates data directly in the OneLake layer without moving data.
- **Hive Catalog.** Visibility and governance for data assets registered in the Hive Metastore.

Turn data trust into a checkpoint for AI and agents

As you introduce agentic workflows into your business, the key question becomes, "Will an agent proceed on bad data?" The answer is yes, but the outcomes won't be reliable or trustworthy.

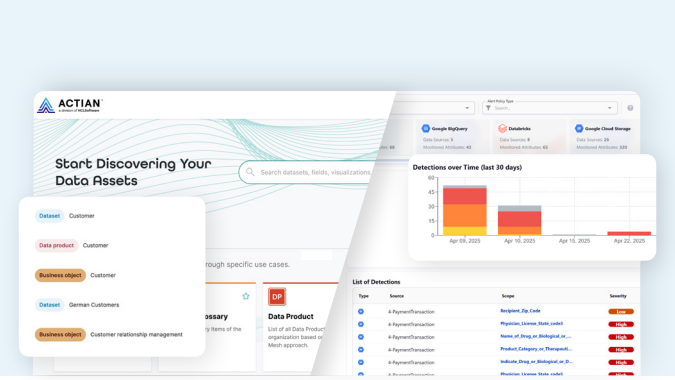
Actian Data Observability Model Context Protocol (MCP) server gives data observability context, such as quality status, incidents, alerts, monitors, and validation results. This context is fed directly to AI assistants and agentic workflows using enterprise authentication, without custom API or webhook integrations.

The MCP server returns decision-ready "go/no-go" signals about validity, freshness, and contract compliance, empowering AI agents to safely proceed, pause, or escalate an issue.

Why a Catalog and Observability Are Better Together

Data Catalog	A shared system of record for metadata—definitions, ownership, lineage, governance, and collaboration—so teams can find and understand data fast.
Data Observability	Continuous monitoring of data health—pipeline performance, anomalies, freshness, and incidents—so teams can trust data that's in production.
Together	You get trusted, usable data at speed. Observability validates freshness, quality, and pipeline behavior, while the catalog turns those trust signals into action—who owns the data, what changed, what's impacted, and what to do next—so teams discover data confidently, resolve issues fast, and leverage governed data for use cases.

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Benefiting from Integrated Capabilities

When catalog context and observability trust signals reinforce each other, your teams realize significant business and technical benefits. These include:

- **Accelerate self-service analytics.** Give users definitions, ownership, lineage, and reliability signals in the same workflow.
- **Reduce incident load.** Validate data early, triage quickly, and activate resolution steps.
- **Improve governance with operational proof**, not just documentation. Link data policies and ownership to what's taking place in production.
- **Enable safer AI initiatives.** Make trust a pre-action checkpoint for AI assistants and agentic workflows.

Together, these benefits give you a dependable system for data. Instead of debating definitions, chasing broken pipelines, or second-guessing dashboards, you get a shared, real-time view of meaning and health. Your teams can move faster, govern smarter, and let analytics and AI operate with confidence.

Discover, Trust, and Act on Data with Confidence

A strong data observability capability should support both automated monitoring and the ability to define and continuously run data quality checks that reflect actual business constraints. When observability is paired with a data catalog, you can find data quickly, trust that it's reliable, and then activate it. Most teams begin by connecting the dots across three layers:

Catalog data's meaning	Establish glossary terms, KPI definitions, ownership, lineage, and documentation so everyone understands the data they're using.
Observe data's health	Monitor, validate, identify incidents, and implement proactive observability agents to prevent issues early.
Operationalize trust	Expose decision-ready trust metrics to teams and AI so workflows proceed with full visibility.

Data catalog and observability integration paves the way for autonomous, self-correcting data ecosystems that proactively manage discrepancies and streamline compliance. The bottom line is that merging a data catalog with data observability isn't a tooling trend. It's how you turn data into an engine for confident decisions and production-ready AI.

About Actian

Actian powers the full data value chain for the AI era. We deliver databases that store and secure data at scale; platforms to connect, manage, govern, and observe it; and solutions to activate it through BI, conversational analytics, and AI agents. More than 20,000 organizations worldwide, including 30 of the Fortune 100, rely on Actian to fuel intelligent decisions and autonomous systems.

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